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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Svetlana V. Shchegrova

Serial No.: 10/061,800

Examiner: My Chau T Tran

Filing Date: January 30, 2002

Group Art Unit: 1639

Title: ERROR CORRECTION IN ARRAY FABRICATION

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Sir:

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on 01-26-2006. This Reply Brief is being filed pursuant to 37 CFR 1.193(b) within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new grounds of rejection.)

No fee is required for filing of this Reply Brief.

If any fees are required please charge Deposit Account 50-1078.

Respectfully submitted,

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REPLY BRIEF Address to: Box DAC Assistant Commissioner for Patents Alexandria, VA 22313-1450	Attorney Docket	10010464-1
	First Named Inventor	Svetlana V. Shchegrova
	Application Number	10/061,800
	Filing Date	January 30, 2002
	Group Art Unit	1639
	Examiner Name	My Chau T Tran
	Title: <i>Error Correction In Array Fabrication</i>	

Sir:

This Reply Brief is in response to the Examiner's Answer mailed by the Office on January 26, 2006.

Please charge any required fees to Deposit Account No. 50-1078, order number 10010464-1.

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REPLY BRIEF

In this Reply Brief, the Appellants address comments made in the Examiner's Answer. The Examiner has raised no new grounds for rejection. The Appellants note that all arguments presented in the prior Appeal Brief still apply with equal force, but are not reiterated in full herein solely in the interest of brevity and for the convenience of the Board.

The comments of the Appellants with regard to certain of the Examiner's assertions in the Examiner's Answer are provided below.

(4) Status of Amendments After Final

The Examiner has correctly pointed out that the amendment after Final, which cancelled previously withdrawn claims, was entered.

(10) Response to Argument

I. Claims 1-3, 5-19, 21-29 and 31-33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Brown et al. (US 5,807,522) and Tisone et al. (US 6,063,339).

The Examiner continues to maintain that the combined teachings of Brown et al. and Tisone et al. make the claimed invention obvious. The Examiner has provided no new arguments or cited new references in maintaining this rejection.

In the Reply Brief, the Examiner asserts that the term *set* in Claim 1 (Group I) encompasses a single dispenser and that this configuration is made obvious over the cited references. In maintaining this rejection, the Examiner asserts that the Appellants inappropriately are reading limitations from the specification into the claims by arguing that a *set* contains more than one dispenser.

The Appellants respectfully submit that a *set* of dispensers as recited in Claim 1 must have more than one dispenser to perform the claimed methods and that this element is clearly recited in claims. Claim 1 reads as follows:

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1. A method of fabricating a chemical array using:
 - a head system with multiple groups of drop dispensers;
 - a transport system to move the head system with respect to a substrate;
 - a processor to dispense droplets from dispensers during operation of the transport system, in a pattern along a selected path for each group;
 - the method comprising:
 - a) loading the dispensers with fluid such that each dispenser group has at least one set of redundant dispensers loaded with a same fluid;
 - b) dispensing drops from the dispensers to identify an error in one or more dispensers;
 - c) moving a first dispenser of each set in each group along the selected path for that group while dispensing drops from non-error first dispensers of the sets in at least part of the pattern along the selected path for each group;
 - d) **moving a second dispenser of the sets** in each group along the selected path for that group while dispensing drops from a non-error second dispenser of a set having an identified error first dispenser, in at least part of the pattern for the selected path of the first group; and
 - e) repeating (a) through (d) at least once;
 - wherein the array is fabricated.

As noted in the Appeal Brief, step *d* of Claim 1 clearly recites the use of a **second dispenser of the sets** (in bold and underlined above) to dispense drops where error dispensers have failed to do so. The only way that this step of the method can be accomplished is for a *set* of dispensers to have more than one dispenser. As such, a *set* of dispensers as claimed in Claim 1 **must** have at least two dispensers.

The Examiner makes similar assertions regarding the remaining independent claims (i.e., Claim 6 [Group III] and Claim 25 [in Group V]). As noted in the Appeal Brief, Claims 6 and 25 include a similar step to step *d* of Claim 1. Claim 6 reads as follows:

6. A method of fabricating a chemical array using:

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a head system with multiple groups of dispensers, the members of each group being arranged in multiple series extending in a first direction and multiple sets;

a transport system to move the head system with respect to a substrate with different series following respective paths, series from different groups which can simultaneously move along the selected paths for their groups forming a dispenser frame;

a processor to dispense drops from dispensers during operation of the transport system, in a pattern along a selected path for each group;
the method comprising:

- a) loading the dispensers with fluid such that dispensers within each set of the groups are loaded with a same fluid;
 - b) dispensing drops from the dispensers to identify an error in one or more dispensers;
 - c) moving a first dispenser frame along the selected paths for the groups while dispensing drops from non-error dispensers of the first frame in at least part of the patterns along the selected paths for the groups;
 - d) when an error dispenser is detected in the first frame, moving a further frame along the selected paths for the groups while dispensing drops from a non-error dispenser of the further frame located in the same set as the error dispenser, in at least part of the patterns along the selected paths for the groups; and
 - e) repeating (a) through (d) at least once;
- wherein the array is fabricated.

As noted in the Appeal Brief, step *d* of Claim 6 clearly recites the use of a **second dispenser of the sets** (i.e., in a different *frame*; in bold and underlined above) to dispense drops where error dispensers failed to do so. As such, a *set* of dispensers as recited in Claim 6 must have at least two dispensers to perform this step of the claimed methods. The same is true for independent Claim 25 (Group V; see step *d*).

Therefore, the Examiner's assertion that a *set* of dispensers as claimed includes sets with only a single dispenser is incorrect. In light of this, the Appellants submit that the combined teachings of Brown et al. and Tisone et al. fail to make

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the claimed invention obvious because they fail to teach dispensers configured as sets as is claimed.

Further, the Appellants strongly disagree that the error correction method assertedly taught in Tisone et al. teaches or suggests the error correction method of the claimed invention.

As noted in the Appeal Brief, in Tisone et al., the drop dispensing parameters of a dispenser is adjusted when it deposits drops in a sub-optimal location (e.g., the phase is adjusted) so that in future use it will deposit the drop in the correct location. Tisone et al. does not teach or suggest identifying a dispenser as an "error dispenser" (see step *b* of the claimed methods) and using an independent dispenser (i.e., one that is not the identified error dispenser) in the same set to dispense the reagent at that location instead. Indeed, as noted above, Tisone et al. fail to even teach or suggest configuring dispensers in the form of sets as is claimed.

In summary, the Appellants submit that the Examiner has failed to give proper weight to each and every element of the rejected claims as is required in establishing a *prima facie* case of obviousness. The Appellants respectfully disagree with the Examiner's assertion that limitations from the specification have been imported into the claims in arguing for patentability. Indeed, as shown above, the Examiner has failed to give any weight to two clearly distinguishing elements recited in the claims of the subject invention, i.e., the dispenser set element and the error dispenser substitution element, as reviewed above.

The Appeal Brief provides an in depth analysis of these and other deficiencies of the cited references in teaching or suggesting each and every element of the claimed invention. As such, the Appellants respectfully request that this rejection be reversed.

II. Claims 4, 20 and 30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US 5,807,522) and Tisone et al. (US 6,063,339) and further in view of Gamble et al. (US 5,958,342).

The Examiner has acknowledged that neither Brown et al. nor Tisone et

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al. teach dispensers that are pulse jets and cites Gamble et al. to remedy this deficiency.

As discussed above and shown in detail in the Appeal Brief, the combined teachings of Brown et al. and Tisone et al. fail to teach or suggest numerous elements of the claimed invention above and beyond pulse jet dispensers. As Gamble et al. fail to remedy *any* of these fundamental deficiencies, the Appellants submit that the combined teachings of Brown et al., Tisone et al. and Gamble et al. fail to establish a *prima facie* case of obviousness for the rejected claims.

Therefore, the Appellants respectfully request that this rejection be reversed.


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SUMMARY

The Appellants respectfully request that the rejections of claims 1-33 under 35 U.S.C. § 103(a) be reversed, and that the application be remanded to the Examiner with instructions to issue a Notice of Allowance.

Respectfully submitted,
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Date: March 27, 2006

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